REMARKS

Claims 1-14 were pending and stand rejected. Claims 5 and 11 have been cancelled, claims 1-3, 6-10, and 12-14 have been amended, and claims 15-22 have been added. Claims 1-4, 6-10, and 12-22 are pending upon entry of this amendment.

The specification has been amended to correct a typographical error. No new matter has been added by this amendment.

Claims 1-5, 10-11, and 13-14 were rejected under 35 U.S.C. § 102(b) as being anticipated by Kupfer. Applicant respectfully traverses. As amended, claim 1 recites:

> A method for quantifying asymmetry of body positions during a movement, comprising:
> determining a first set of data that comprises positions of a first limb as the first limb performs the movement;
> determining a second set of data that comprises positions of a second limb as the second limb performs a similar movement;
> generating a shape based on the first set of data and the second set of data; and
> determining a value of a characteristic of the generated shape.

Kupfer does not disclose, teach, or suggest the claimed element "determining a value of a characteristic of the generated shape." Kupfer discusses a device and method for recording, presenting, and classifying biomechanical load variables (abstract). Kupfer includes a graph where a jagged line represents the predicted compression force on the L5/S1 discs in a person's back over time (FIG. 16). Assuming, *arguendo*, that the jagged line corresponds to the claimed element "a shape based on the first set of data and the second set of data," Kupfer does not disclose determining a value of a characteristic of the jagged line (for example, the area under the line or the orientation of the line). Therefore, Kupfer does not disclose, teach, or suggest the claimed element "determining a value of a characteristic of the generated shape."

Claim 1 is therefore patentable over Kupfer. Claims 13-14 recite similar language to claim 1 and are also patentable over Kupfer, for at least the foregoing reasons.

Claims 1-8 and 10-14 were rejected under 35 U.S.C. § 102(b) as being anticipated by Hershler. Applicant respectfully traverses. As amended, claim 1 recites:

> A method for quantifying asymmetry of body positions during a movement, comprising:
> determining a first set of data that comprises positions of a first limb as the first limb performs the movement;
> determining a second set of data that comprises positions of a second limb as the second limb performs a similar movement;
> generating a shape based on the first set of data and the second set of data; and
> determining a value of a characteristic of the generated shape.

Hershler does not disclose, teach, or suggest the claimed element "generating a shape based on the first set of data and the second set of data." Hershler discusses using angle-angle diagrams to plot two selected lower limb angles against each other for corresponding instants of time (abstract). Hershler discusses collecting angle information for both the left and right hip joints and knee joints (p. 117). Assume, *arguendo*, that joint angle information for the left leg corresponds to the claimed element "a first set of data that comprises positions of a first limb as the first limb performs the movement" and that joint angle information for the right leg corresponds to the claimed element "a second set of data that comprises positions of a second limb as the second limb performs a similar movement." If this were true, then the claimed element "generating a shape based on the first set of data and the second set of data" would correspond to generating a shape based on joint angle information for the left leg and joint angle information for the right leg. However, the angle-angle diagrams in Hershler plot angle information for joints of the same leg. For example, an angle-angle diagram in Hershler plots the right hip versus the right knee or the left hip versus the left knee (p. 118). Thus, Hershler does

not disclose, teach, or suggest the claimed element "generating a shape based on the first set of data and the second set of data."

Claim 1 is therefore patentable over Hershler. Claims 12-14 recite similar language to claim 1 and are also patentable over Hershler, for at least the foregoing reasons.

Claim 12 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Kupfer in view of Au, further in view of Goswami. Applicant respectfully traverses. As amended, claim 12 recites:

> A method for quantifying asymmetry of joint angles during a movement, comprising:
> determining a first set of data that comprises angles of a joint of a first limb as the first limb performs the movement;
> determining a second set of data that comprises angles of a joint of a second limb as the second limb performs a similar movement;
> generating a cyclogram based on the first set of data and the second set of data;
> determining a value of a characteristic of the generated cyclogram; and
> comparing the determined value to a value of the characteristic of a cyclogram representing a baseline movement.

Neither Kupfer nor Au nor Goswami, alone or in combination, discloses, suggests, or teaches the claimed element "generating a cyclogram based on the first set of data and the second set of data."

Applicant agrees with the Examiner that Kupfer does not disclose, teach, or suggest this claimed element.

Au does not remedy this deficiency. Au discusses processing motion data to present various displays showing information indicative of a person's particular walking characteristics (abstract). Specifically, Au discusses cyclograms of hip angle-knee angle relations (2:49-51; 14:33-40; FIG. 8). Assume, *arguendo*, that hip angle information for the left leg corresponds to the claimed element "a first set of data that comprises angles of a joint of a first limb as the first

limb performs the movement" and that knee angle information for the right leg corresponds to the claimed element "a second set of data that comprises angles of a joint of a second limb as the second limb performs a similar movement." If this were true, then the claimed element "generating a cyclogram based on the first set of data and the second set of data" would correspond to generating a cyclogram based on hip angle information for the left leg and knee angle information for the right leg. However, the cyclogram in Au plots angle information for joints of the same leg. Specifically, the cyclogram in Au plots the left hip versus the left knee (FIG. 8). Thus, Au does not disclose, teach, or suggest the claimed element "generating a cyclogram based on the first set of data and the second set of data."

Goswami does not remedy this deficiency. Goswami discusses using geometric moments of cyclogram contours as gait descriptors (abstract). Specifically, Goswami discusses cyclograms of hip-knee, hip-ankle, and knee-ankle combinations (p. 6). Assume, *arguendo*, that joint angle information for the left leg corresponds to the claimed element "a first set of data that comprises angles of a joint of a first limb as the first limb performs the movement" and that joint angle information for the right leg corresponds to the claimed element "a second set of data that comprises angles of a joint of a second limb as the second limb performs a similar movement." If this were true, then the claimed element "generating a cyclogram based on the first set of data and the second set of data" would correspond to generating a cyclogram based on joint angle information for the left leg and joint angle information for the right leg. However, the cyclograms in Goswami plot angle information for joints of the same leg. For example, a cyclogram in Goswami plots a first joint of the right leg versus a second joint of the right leg (p. 4). Thus, Goswami does not disclose, teach, or suggest the claimed element "generating a cyclogram based on the first set of data and the second set of data."

Thus, neither Kupfer nor Au nor Goswami, alone or in combination, discloses the claimed element "generating a cyclogram based on the first set of data and the second set of data." Claim 12 is therefore patentable over Kupfer, Au, and Goswami, alone and in combination. Additionally, for the record, Applicant traverses the Examiner's assertions concerning the motivation to combine Kupfer, Au, and Goswami.

The claims not specifically mentioned above depend from their respective base claims, which were shown to be patentable over Kupfer, over Hershler, and over Kupfer in view of Au, further in view of Goswami. In addition, these claims recite other features not included in their respective base claims. Thus, these claims are patentable over Kupfer, over Hershler, and over Kupfer in view of Au, further in view of Goswami, for at least the reasons discussed above, as well as for the elements that they individually recite.

Applicant respectfully submits that the pending claims are now allowable over the cited art of record and requests that the Examiner allow this case. The Examiner is invited to contact the undersigned in order to advance the prosecution of this application.

Respectfully submitted,
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